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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/767,047	01/29/2004	Stefan Kotter	00-1-242DIV1	4808

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EXAMINER	
HINES, ANNE M	

ART UNIT	PAPER NUMBER
2879	

DATE MAILED: 12/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/767,047	KOTTER ET AL.	
	Examiner	Art Unit	
	Anne M. Hines	2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 January 2005*.

2a)☐ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *10-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *10,11,15-18 and 22-24* is/are rejected.

7)☒ Claim(s) *12-14,19-21,25* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *29 January 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *4/04 and 11/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Applicant's election without traverse of Group I, claims 10-25 in the reply filed on January 21, 2005 is acknowledged.

Specification

The abstract of the disclosure is objected to because it does not describe the claimed invention of an apparatus for making a ceramic arc tube. Applicant is reminded of the proper content of an abstract of the disclosure.

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

In the specification, the paragraph beginning at page 1, line 6 should be amended to reflect the current status of the application numbers 09/841,414 and 09/841,424.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 10, 15-18, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cortorillo (US 3628846).

Regarding claim 10, Cortorillo teaches an apparatus for making a ceramic arc tube comprising: a pressure jacket (Fig. 3, 20; Column 3, lines 45-47) having a pressure chamber containing an RF susceptor, the susceptor having an opening for receiving a capillary of the arc tube (Fig. 3, 10 & 4; Column 3, lines 73-75), an RF induction coil situated external to the pressure jacket and surrounding the RF susceptor (Column 4, lines 27-43), the pressure chamber being connected to a source of pressurized buffer gas and a vacuum source, the source of pressurized buffer gas being regulated (Fig. 3, 9a & 13b; Column 3, lines 64-68; Column 4, lines 49-53), a holder having a support for the arc tube, the height of the support being selected to cause an unsealed end of the arc tube to be positioned within the RF susceptor when the holder is sealed to the apparatus (Fig. 3, 13; Column 3, line 64); and the apparatus when sealed being capable of alternately evacuating the pressure chamber and filling the pressure chamber with buffer gas (Column 3, lines 64-68; Column 4, lines 49-53). Cortorillo also teaches wherein the cooling period during which the buffer gas is introduced to the chamber is regulated in order to prevent cracking of the arc tube (Column 5, lines 31-51). Therefore, it would have been obvious to one of ordinary skill in the art to modify the invention of Cortorillo to have the buffer gas pressure regulated through a valve and pressure sensor since in a control system for gas pressure a valve and pressure sensor comprise a first order closed-loop (feedback) control system, which would be the minimum necessary to control the cooling of the arc tube with buffer gas as taught by Cortorillo. Further the Examiner considers an RF power source inherent to the

disclosure of an RF coil since an RF power source is required to operate the RF coil and RF susceptor to heat the glass frit in the process disclosed by Cortorillo.

Regarding claim 15, Cortorillo further discloses wherein a thermal shield is positioned between the RF susceptor and the RF induction coil (Column 4, lines 27-43; Fig. 3, 20; Fig. 4, 17).

Regarding claim 16, Cortorillo further discloses wherein the edges of the susceptor are blunt (Fig. 3, 10). Note that the Examiner considers the property of reducing electric field enhancement—the benefit of blunt edges of an emitter—inherent to the blunt edge shape claimed in claim 16 since it is well known in the art that points enhance the emission of an electric field in electric discharge devices while blunted edges reduce the emission of an electric field.

Regarding claims 17 and 18, Cortorillo discloses the structural limitations of claim 10 and, therefore, the structural limitations of claims 17 and 18. The phrases "wherein the induction coil is operated in a single-ended mode," in claim 17 and "wherein the induction coil is operated in a differential mode," in claim 18 are methods of operating and are not given patentable weight in claims to an apparatus. It is the claimed apparatus and not the method of operating that is covered by the claims. Accordingly, the invention of Cortorillo is considered to meet the structural limitations claimed.

Regarding claim 22, Cortorillo further discloses wherein the pressure jacket is quartz (Column 6, lines 11-12), which the applicant equates to fused silica at Paragraph [0032] of the specification.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cortorillo (US 3628846) in view of Ray (US 4386896).

Regarding claim 11, Cortorillo teaches the invention of claim 10 including wherein the RF susceptor is a hollow tungsten or molybdenum cylinder (Fig. 3, 10; Column 3, lines 73-75) but fails to teach wherein the RF susceptor is graphite.

In the same field of endeavor, Ray teaches an RF susceptor made of tungsten, molybdenum, or graphite in order to provide a susceptor that has stability at high temperatures with good electrical conductivity (Column 9, lines 53-56). Ray teaches the suitability of using a susceptor formed of graphite. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the composition of the susceptor, as disclosed by Ray, in the invention of Cortorillo in order provide a susceptor that has stability at high temperatures with good electrical conductivity and to choose from one of the materials disclosed by Ray, since Ray teaches the suitability of using a susceptor formed of graphite and it has been held to be within the general skill of an artisan to select a known material on the basis of the intended use. See MPEP 2144.07.

Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cortorillo (US 3628846) in view of Pless (US 4258240).

Regarding claim 23, Cortorillo teaches the invention of claim 10, but is silent regarding the frequency of the RF power source.

In the same field of endeavor of RF power sources, Pless teaches wherein the frequency of an RF power source is 27.12 MHz in order to fall within the dielectric heating bands permitted by international agreement (Column 4, lines 6-9).

Therefore, it would have been obvious to one of ordinary skill in the art to modify the invention of Cortorillo to have the frequency of the RF power source is 27.12 MHz in order to fall within the dielectric heating bands permitted by international agreement, as disclosed by Pless.

Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cortorillo (US 3628846) in view of Kasevich (US 6346693).

Regarding claim 24, Cortorillo teaches the invention of claim 10 but fails to teach wherein the RF power source has an RF matching network which minimizes reflected power.

In the same field of endeavor of RF power sources for heating applications, Kasevich teaches wherein an RF power source has an RF matching network in order to optimize the impedance between the RF generator and the heated object allowing uniform heating of the object while maintaining maximum power transfer of the RF energy from the RF generator to the object (Column 7, lines 59-65).

Allowable Subject Matter

Claims 13-14, 19-21, and 25 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Other Prior Art Cited

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- McCullough et al. (US 2996347): Discloses an apparatus for sealing the annular joint of an electron tube with radio frequency induction heating.
- Denison (US 3123470): Discloses an apparatus for sealing an electron tube through radio frequency induction heating of susceptor particle located within a glass frit sealing material.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anne M. Hines whose telephone number is (571) 272-2285. The examiner can normally be reached on Monday through Friday from 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on (571) 272-2457. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Anne M Hines
Patent Examiner
Art Unit 2879

12/11/2009

MARICELI SANTIAGO
PRIMARY EXAMINER